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This study identified, defined, and applied communications concepts required by adult educators in agriculture to fulfill their role as change agents. An extensive review was made of the literature, related research, and opinions of specialists in communication, extension education, and vocational agriculture to predict behavior needed for future competence, identify relevant concepts from the behavioral sciences, and develop educational objectives. Analysis and refining produced 30 distinctive units or concepts. Real-life situations and examples were used to explain such major concepts as affective behavior, channel, commitment, language, message, persuasion, sender, and receiver. Finally, seven kinds of desired knowledge were discussed as guidelines for intensive study: communication as a dynamic process; the importance of communication concepts in educational change; the concepts themselves as related to agricultural education; the importance of the communicator in presenting valid information; sources of difficulties; the sender receiver relationship; and qualities desirable for improving information dissemination. (Three figures and 47 references are included.) (ly)

RESEARCH SERIES IN AGRICULTURAL EDUCATION

A Research Report
of a
Graduate Study

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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COMMUNICATION CONCEPTS USED BY ADULT EDUCATORS IN AGRICULTURE TO IMPLEMENT EDUCATIONAL CHANGE

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FOREWORD

The research reported in this document was part of a U. S. Department of Health, Education, and Welfare sponsored project. The more complete report "Communication Concepts for Developing Increased Competence Among Cooperative Extension and Vocational Agriculture Educators in Implementing Educational Change" is available in microfishe or hard copy from ERIC Document Reproduction Service.

The research on communication concepts was initiated as a part of a National Extension Curriculum Seminar Project. The National Extension Curriculum Seminar has been in operation since 1964 with Dr. Ralph Tyler as a consultant. Extension education staff members from fourteen institutions have been meeting in this seminar to understand and utilize concepts in the curriculum development processes and to prepare resource materials for use by individuals in developing curriculum at institutions where extension education degrees are offered. This project is an example of materials that might be used for curriculum development at institutions offering advanced degrees in extension education or other fields of adult education.

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CONCLUSIONS

The following conclusions are based upon evidence from the study.

1. The study of technical, social and economic trends and the connected changes needed in adult agricultural education was an effective way of determining those anticipated intellectual behavioral requirements needed for future competence in communications.
2. The identification of concepts from communication literature was an effective way of organizing a wealth of material in the field of communication. The relevance of these concepts to the intellectual behavioral requirements hold tremendous possibilities for determining the usefulness of any subject matter field to a particular job.
3. The process of screening, defining and describing the communication concepts proved successful in determining a small number of concepts as being most important to the adult educator in agriculture.

Need for the Study

One needs to recognize that agriculture is extremely dynamic and unanticipated changes will occur. There is a need for quicker, more efficient innovations of improved methods to meet the population--production crises with which the world is presently faced. Communication is a factor that will enhance or slow up this change depending upon its effectiveness in diffusing new and superior information to the producer, distributor, and consumer.

> Progress is slowed as a result of too many people saying the wrong things, at the wrong time, in the wrong ways, to the wrong people. Much misunderstanding results from faulty communication. What is needed is more people saying the right things, at the right time, in the right way to the right people.[1]

The existing competencies of adult educators must be greatly accelerated if they are to be instrumental in implementing educational innovations in their own programs and recommend economically and socially sound changes for their clientele. The increased need to develop programs directed toward the economically disadvantaged accentuates the need for an improved understanding of the relevant concepts in the behavioral sciences that will of necessity be brought to bear on the problems confronted.

Effective communication can greatly assist in destroying the barriers in the social structure; in creating a greater understanding and appreciation of innovations beneficial to the individual, nation

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[1] J. Paul Leagans, "Some Concepts Purportedly Significant to a Graduate Curriculum for Developing Professional Extension Educators." (Paper presented by National Seminar Studying Extension Education Curricula, Chicago, Feb. 1965), p. 5.

and the world in accelerating economic and social development.

Purpose

The general purpose of this study was to identify, define and operationalize the communication concepts required by adult educators in agriculture to fulfill their role as educational change agents.

Specific Objectives

The following objectives were identified to facilitate the pursuit of this study:

1. To determine the anticipated intellectual behavioral requirements for future competence in communication.

2. To identify relevant communication concepts from the behavioral sciences.

3. To define and describe the concepts.

4. To develop suggested educational objectives for use in staff development programs.

PROCEDURES EMPLOYED IN THE STUDY

The general design for this study was based fundamentally on the idea that in the initial step in the development of a comprehensive training program for professional workers, regardless of appropriate and valid objectives, two dimensions are paramount. First, the intellectual behavioral requirements of the job must be identified. Second, relevant knowledge required to develop the intellectual behaviors must be identified and described as the basis for the development of the training program.

Four stages were envisioned with each stage related to the objectives of the study. These stages were: (1) the determination of the anticipated behavioral requirements for future competence in communication; (2) the identification of relevant concepts from behavioral science disciplines; (3) the definition and description of the concepts; and (4) the development of suggested education objectives. The divisions were not intended to be discrete stages, but were suggested to help achieve clarity in the procedural aspects of the study.

The Determination of the Anticipated Intellectual Behavioral Requirements for Future Competence in Communication

A review of research reports and projections by experts in agricultural education was conducted and those relevant technical, social and economic trends were reviewed to construct a list of changes which needed to be effected in agricultural education to cope with these trends. Based on this review, a list of anticipated

intellectual behavioral requirements for future competence in communication was developed for educators in agricultural education.

The Identification of Relevant Concepts

An extensive review of literature written by authorities in the field of communication served to identify relevant communication concepts. These concepts were ranked in four groups according to their importance using a screening process determined by: (1) asking authorities in the field of vocational agriculture and cooperative extension to check concepts most important to the field; (2) comparing and contrasting the intellectual behavioral requirements to determine the important concepts involved; (3) examining situations to determine those communication concepts by their presence contributed to the success of, or by their absence contributed to the failure of the incident; (4) considering those concepts used in the definitions of communication; and (5) examining the indexes of books written by specialists in communication to determine the important concepts.

Definition and Description of the Concepts

Based on the results of the screening process the resultant most relevant concepts were further developed by citing an incident familiar to most agricultural adult educators, giving the relevance of the concept to the situation and other communication concepts, and finally supplying a definition of the concept.

The Identification of Suggested Educational Objectives for Training Programs

Based on the definitions and explanations of the most relevant communication concepts a list of educational objectives for training programs was suggested.

Authorities in the field of communication, cooperative extension and vocational agriculture reviewed periodically the work being done on all stages of the study.

MAJOR FINDINGS

An extensive review of the literature, related research and the opinions of specialists in the field of communication, cooperative extension, and vocational agriculture constitutes the basis for the following summary of the findings of this study.

Technical, Social and Economic Trends in Society

It is impossible to predict specifically the consequences of possible developments. However, to refuse to consider possible developments, overwhelming technological, social and economic changes will engulf our programs and force change without proper foresight and preparation or crush the remaining flicker of light they have to offer.

Specialization might be thought of as the key that unlocks the doors to a successful future. Specialized production, marketing, packaging, distribution, management, organization, leadership and administration aided by new and more specialized machines will bring with it fewer but highly specialized jobs in applied fields and more jobs in service areas, especially areas related to solving social problems. Higher incomes for all but especially for those highly trained, efficient individuals will be in order.

The American economy will be responsible to world wide economy and also dependent on it as travel, communication and exchange of personnel, goods and services become more abundant. The farm segment will continue to become increasingly dependent on other segments of the economy as cash substitutes labor.

Mass education, large research and development laboratories, mass transportation, mass religion, mass recreation facilities, big business, even small business will bring new problems and solutions but will increasingly operate in ways intended to maximize command and control of predictability and stability on a world wide basis.

Changes Needed in Agricultural Education

Extension education, irrespective of the agency sponsoring it, will need to place its emphasis on education using a "rifle approach" well levelled at different clientele using different approaches.

An objective presentation of facts from a credible source will become increasingly important as more companies provide services with their products. Specialized training for specialized audiences including personnel concerned with extension education will be essential in greater depth at more frequent intervals.

Organization will need to change with the increase in population which will result in increased numbers of clientele to be served. Greater experimentation will be needed to solve new and unfamiliar problems with greater cooperation among agencies, each relying on the others specialty to effectively solve yet unrecognized problems.

Intellectual Behavioral Requirements

The specification of the anticipated intellectual behavioral requirements for future competence in social change were determined by reviewing the relevant technical, social and economic trends in society and the trends needed in cooperative extension and vocational

agricultural education. The effective vocational agricultural teacher and the cooperative extension agent:

1. Possesses an educational and social philosophy that is consistent with the expectations of contemporary society, the Cooperative Extension Service or Vocational Agricultural Education and other authorities in Adult and Continuing Education.

2. Understands the social organization within which the county extension agent and vocational agricultural teacher functions and the influence of technological, economic and social forces on its evolution.

3. Understands the role of the Cooperative Extension Service or Vocational Agricultural Education and related educational institutions in facilitating social, economic and cultural adjustments required by individuals and groups to effectively cope with the consequences of rapid technological developments.

4. Understands his role as a professional educator and the relationship of his role to others in his profession and related organizations.

5. Acquires and utilizes a unified formulation of a theory of learning.

6. Understands the processes of social change.

7. Understands the processes of curriculum development. Is prepared to work with technicians and with teaching aids.

8. Understands technical subject matter appropriate to his job and is knowledgeable about reliable sources of information.

9. Values and actively pursues continuing study as an essential factor to his continued professional growth.

10. Knows the sources of pertinent economic and social data needed to effect an educational program, and is proficient in the collection, analysis and interpretation of these data.

11. Effectively identifies, organizes and develops the human and technical resources needed to plan, execute and evaluate area, county, or community programs.

12. Interprets with leaders and other appropriate persons the influence of technological, economic and social factors in relation to forces operating within society and their impact on the individual, family, group and community in society.

13. Helps people (groups and individuals) invoke the decision-making process in determining problems, needs and opportunities; establish objectives, and select a course of action and provides learning experiences to meet their specialized needs.

14. Prepares a long-term program (plan, curriculum, etc.) based upon decisions arrived at jointly by both professionals and lay leaders.

15. Diagnoses problems contained in the program statement in order to identify specific problems encompassed within major problem areas; determine causal factors contributing or associated with each of the specific problems; and sequentially orders the specific problems based upon the stage of the clientele group in the learning process.

16. Identifies and characterizes audiences to be reached as reflected in the identified problems.

17. Formulates objectives for each of the specific problems in terms of the learners (audiences) and behavioral change to be achieved.

18. Identifies and organizes learning experiences appropriate to the objectives for the identified audiences and uses the problems identified.

19. Selects channels of communication needed to provide stimulation for learning to occur, including new media such as computers, closed circuit television and programmed system of instruction.

20. Determines the human and material resources needed to provide learning experiences for the several groups of learners including units of instruction for (a) non-agricultural occupations and for (b) non-vocational oriented clientele.

21. Identifies and obtains the cooperation of appropriate resource persons to assist in providing the needed learning experiences. Works effectively and in a meaningful way in team work and in flexible programs.

22. Plans and conducts educational experiences for resource persons and leaders in order to assist them to acquire needed competence.

23. Maintains effective vertical and horizontal communication channels with various leaders, resource persons and relevant professionals in the actual planning, execution and evaluation of the program. Uses "lay" advisory committees and agricultural industry personnel.

24. Develops plans for evaluating program accomplishments in relation to defined educational objectives and the several developmental processes.

25. Identifies, collects and interprets evidence with respect to program objectives and learning experiences.

26. Informs professional colleagues, leaders, public officials, and his several publics of program accomplishments.

27. Utilizes findings of evaluative studies as a basis for strengthening and/or redirecting program efforts. Has an eye to future needs and is teaching to meet those future needs.[2]

Concept Identification

Of approximately two hundred and seventy-five concepts identified in the literature, twenty-seven passed four tests in the screening process and were classified as being most important.

Twenty-five concepts were classified as being of much importance and seventy-two as being important. The remaining communication concepts identified were classified as being interesting possibilities for future study.

Within the first three groups many of the words referred to the same concept, i.e., receiver, audience, publics, target audience. As a result of this duplication, a further regrouping resulted in thirty more distinctive units with each unit representing one broad

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[2]Note: The following papers were used extensively in formulating this list of intellectual behavioral requirements.

E.H. Quinn and E.J. Boone, "A Role Model of the County Extension Agent," mimeograph presented to the National Extension Curriculum Seminar, Asheville, North Carolina, August 1967.

Lloyd J. Phipps, "Emerging Approaches to the Professional Education of Teachers of Agricultural Occupations," mimeograph presented to the National Vocational-Technical Teacher Education Seminar, Chicago, September, 1967.

idea or concept. Most of the key words denoting concept groups have been included in group one. Groups two and three generally served to support those concepts in group one.

Communication Concepts in Units with Similar Meanings

The capitalized words in the left column are arranged in alphabetical order. The right column represents the opposite to most of the concepts listed in the left column. In some cases, neither side represents the extreme end of the continuum but the concepts are listed as such because they represent different points on the same continuum. In cases where meaningful differences were not apparent the right column was left blank.

1. AFFECTIVE BEHAVIOR	RATIONAL BEHAVIOR*
Emotion	Rational*
Feeling	Insensitive*
2. ATTITUDES	
Opinions	
3. AUTHORITY	LAXITY*
Dynamic (force)	
Influence	
Personality	
Role	
Prestige	
4. CAPABILITY	
Competency	
Skills	
5. CHANNEL	
Dissemination	
Medium	
Senses	
Techniques	
Transmission	

6.	COMMITMENT	APATHY
	Action	Inactivity*
	Decision-making	Indifference*
	Problem-solving	
	Thinking	
7.	CREDIBILITY	UNTRUSTWORTHY*
	Expertness	Inexpertness*
	Intelligence	Inability*
	Known	Unknown*
8.	DIVISIBILITY	INDIVISIBILITY*
	Breakdown	
9.	EXPERIENCE	INEXPERIENCE*
	Exposure	
10.	FIDELITY	NOISE
	Clarity	Barriers
11.	FREQUENCY	
	Redundant	
	Repetition	
12.	INFORMAL	FORMAL*
	Indirect	Direct*
	Interaction	
	Person-to-person	Mass
13.	INFORMATION	
	Propaganda	Reason
14.	INTEREST	DISINTEREST*
	Attention	
	Empathy	
	Ideas	
	Participation	
15.	INTERPRETATION	MISINTERPRETATION*
	Representation	
16.	LANGUAGE	
	Code	
	Gestures	
	Signal	
	Symbols	
	Verbal*	Non-verbal*
	Vocabulary	
	Words	

17.	MESSAGE	
	Connotative	Denotative*
	Content	
	Meaning	
	Preparation	
	Presentation	
	Treatment	
18.	NEEDS	
	Acceptability	Resistance
	Desires	
19.	PERCEPTION	MISPERCEPTION*
	Expectation	
	Image	
20.	PERSUASION	DISUASION*
	Effects	
	Motivation	Restraint*
	Reward	
	Stimulation	
21.	PLANNING	LACK OF PLANNING*
	Cooperation	
	Organization	
22.	PRIMACY	LATENCY
	Recency	
23.	PROCESS	
	Linkage	
24.	PURPOSE	AIMLESSNESS*
	Emphasis	Chance*
	Focus	Open ended*
	Objectives	Uncertainty*
25.	REALITY	
	Facts	
26.	REINFORCEMENT	
	Learning	
	Retention	
27.	RESPONSE	
	Evaluation	
	Expression	
	Feedback	
	Overt Behavior	Covert Behavior*

28. SENDER
    - Speaking
    - Visualizing
    - Writing
    - Encoder
    - Source
    - Communicator

RECEIVER
- Listening
- Observing
- Reading
- Decoder
- Audience
- Target Audience
- Publics
- Destination

29. SOCIAL AND CULTURAL SYSTEM
    - Occasion
    - Situation

30. TIMING

*Concepts from group four, included here for the purpose of clarification.

Explanation of the Major Concepts

The explanation of the thirty major concept groups showed the use of many of the communication concepts in the majority of situations in combination with the major concept being explained. Those concepts in group four -- lesser importance -- were also found fewer times in the situations explaining the major concepts.

Each of the concepts designated by the capitalized words in the listing of units with similar meanings was explained further according to a set procedure as follows:

1. A situation was chosen where the major concept was known to be operating.
2. The relevance of the concept to the situation was explained further and the relationship to other communication concepts was shown. Those concepts considered to be important to the situation were underlined to facilitate identification.

3. Finally an explanation or definition of the concept was given to further clarify its meaning.

Only affective behavior, channel, commitment, language, message, persuasion, sender and receiver are given as examples in this document.

Affective Behavior

Situation

Reuben Fritz, county agent in a midwestern state, desired to inform land owners about resources available to them for the purpose of developing wild life habitat on their properties.

Fritz planned a very successful meeting for those persons interested in this aspect of conservation. Four specialists were present. The auditorium was literally packed and interest was very high. The meeting had to be adjourned before all the questions could be answered.

Telephone calls and letters asking for further information increased markedly. Orders received by the Agricultural Conservation Service increased dramatically. Outdoor writers used the material handed out at the meeting in follow up articles and the university published a bulletin which included much of the material used by Mr. Fritz.

Relevance of the Concept

The agent's problem was to find ways to improving wild life habitat in his country. The communication problem was to increase the

awareness of resources available to help the farmer.

The word conservation in agricultural circles has emotional overtones. It is an excellent example to show the effect of affective behavior. An active response is almost assured. In conservation either the person is strongly against or strongly for a program whether it is on soil erosion, in wild life protection, or in some other aspect.

Since the subject of the above situation had to do with conservation, affective behavior was a factor which contributed largely to its success. People became emotionally involved. The source of information indicated authoritativeness and credibility. The channels of communication were used to a great extent as follow up to the meeting itself. This repetition encouraged continued interest and involvement of personal feelings which brought about overt behavior.

Definition of Affective Behavior

Affective behavior is similar to emotion and indicates an excited state of mind that accompanies goal directed efforts -- fear, anger, joy, disgust.[3]

Emotional reactions occur only as responses to situations and cannot be separated from the situation or experience which evoke them. Emotion, therefore, refers to a component of a complex reaction that an individual undergoes in a given situation and is characterized by:

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[3]Horace B. English and Ava C. English, A Comprehensive Dictionary of Psychological and Psychoanalytical Terms. (New York: David McKay Company, Inc., 1958), pp. 15-16.

(1) a marked change in the internal state of the organism, (2) awareness of the change, and (3) behavior indicative of an attempt to adjust to the given situation.[4]

Channel

Situation

An increase in inquiries concerning profit making projects for small property owners prompted a midwestern county agent to investigate, with county extension staff and selected individuals in specialized phases of agriculture, the possibility of arranging a special session for this clientele.

A school to run two nights was planned. Meeting notices were sent to vocational agricultural teachers, bankers, city farmers and all other known owners of small farms. Publicity was given via radio, television and newspaper. Instructors including successful horse trainers and kennel operators and growers of vegetables, berries and sod prepared written texts for presentation. These texts were mimeographed, bound and distributed. The question and answer periods following each presentation revealed enthusiastic participation. Many problems and possibilities were singled out by these specialists as being important when considering roadside marketing, renting pasture land, boarding horses and dogs, recreation farming, campsites, et cetera. The two meetings attracted 379 persons.

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[4]Jon. Auer Eisenson, J. Jeffery and John V. Irwin, The Psychology of Communication. (New York: Meredith Publishing Company, 1963), p.285.

Relevance of the Concept

The agent recognized a need to help provide several alternatives to small or to part time farmers. His immediate communication problem was one of making this audience aware of a meeting geared to their needs.

In advertising most of the common channels for transmitting messages were used including radio and television. The follow up material served as a handy reference to persons wishing to check certain points related to the content and to those desiring further information. Frequency of exposure through channels used to transmit specific information most likely to reach the target audience influenced many to attend the informative sessions.

Definition of Channel

The channel is a complete system for transmitting a signal from an input location to an output location including the code or language used. It can be newspaper or news service or any combination of physical, organic and social transmitting media.[5]

The choice of the channel is often an important factor is conducting the message. It can be thought of as the medium, a carrier of messages. Psychologically the communication channel is defined as the senses through which a decoder-receiver can perceive a message which has been encoded and transmitted by a source-encoder.[6]

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[5]English and English, op. cit., p. 83.

[6]David K. Berlo, The Process of Communication: An Introduction to Theory and Practice. (New York: Henry Holt and Company, 1960), pp. 45-47.

Commitment

Situation

In a central state a certain community had failed to become interested in 4-H club activities. Finally after several years of efforts that ended in failure a community leader contacted the 4-H agent with the idea of forming a 4-H club. On the night of the first meeting nine leaders and sixty-five potential members were present full of enthusiasm and ideas. The 4-H agent worked as many of the ideas as possible into a proposed 4-H club program that would meet local needs.

In another community in the same state 4-H had also failed to become established. The 4-H agent contacted several leaders but received negative replies. However, the agent tried to establish a club in spite of negative advice given by the school principal. The agent managed to recruit fifteen members but no leaders.

Relevance of the Concept

In both communities commitment was the key to what happened. In the first case action came first from local sources, from people who had thought through the situation and had made a decision. The 4-H agent cooperated to solve problems.

In the second case there was apathy or inactivity on the part of those living in the community. The best efforts on the part of the agent were doomed to failure because of the lack of support.

When commitment is involved in communication we must consider the following questions. Who am I? What am I trying to achieve? Who else is involved? What are they trying to achieve? What are the consequences to the audience if they do what I want them to do?

Definition of Commitment

Commitment is the decision of a communicator to follow through with a message. Usually there is a high degree of motivation involved. On the part of the receiver it is a decision to accept and practice the desired behavioral action.

Language

Situation

One evening a group of Americans were having a meal just before bedtime. One Brazilian was in the group. The subject of conversation was the importance of learning the language of the host country in order to effectively communicate. Wesley Archibald, who had lived in Brazil for forty-six years said he would demonstrate. He motioned to the Brazilian, Sr. Paulo, and stated, "It's time to go to bed." No response. "It's time to go to bed," still no response. A little louder this time, "It's time to go to bed," a very puzzled look came over Sr. Paulo's face while the rest of the group grinned. This time real loud, "It's time to go to bed," still no reaction to indicate that Sr. Paulo understood. Finally, Wesley put his two hands together, placed them near his face, tilted his head and shut his eyes without speaking a word. A sudden glitter appeared in Paulo's eyes -- he understood.

Relevance of the Concept

Language is more than words and certainly far more than English words. Gestures have meaning but to converse freely other signals are needed to support gestures.

Among the problems of language is the "clear only if known" fallacy. Pick up any dictionary and look up almost any word and see what is given as a definition. You will know what the word is and know what it means provided you know what the words in the definition mean. Dictionary definitions are the substitution of one set of symbols for another, and if you don't know what the second set means, you don't know what the first set means.

Definition of Language

Language is the ability of a man to communicate by a semantic communication symbol system. Our facility in handling the language code affects our ability to encode thoughts as well as affect the thoughts we have. More specifically the words we command and the way that we put them together affect (a) what we think about, (b) how we think and (c) whether we are thinking at all.

Language is a type of coding which is defined as putting ideas into a meaningful group of symbols which express the source's purpose in the form of a message.

Message

Situation

Did you ever try to tell a foreigner what vocational agriculture or extension is all about, or that the comic strip "Peanuts" is funny, or that all Americans are not rich?

What do your clientele know about your organization? Does it really matter whether you tell them you represent the University, or Cooperative Extension, or County Extension Service?

The meaning is not really a part of the message. Meaning is a property of people, not words and things. What difference does it make what words you use to explain your point, so long as you get the point across? When speaking about poor countries; underdeveloped, have not nations, developing, underprivileged, poor, deprived nations are approximately synonymous terms but some persons from these countries may be offended if certain of these terms are used.

Relevance of the Concept

The above example serves to illustrate that in sending a message it is not good enough to assume "I know, why shouldn't they." All the affecting variables are important considerations such as experience, social cultural system, level of education, needs, perceptions, interests, motivations, attitudes, positions and goals.

Definition of Message

We define a message as the actual physical product of the source-encoder. When speaking, the speech is the message. When writing, the writing is the message. When painting the picture is the message. When gesturing, the movements and expressions are the message.[8]

Message is that part of a person's behavior which is perceived by another as having implications or meaning for him.[9]

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[8] Ibid., p. 54.

[9] Ibid., p. 319.

"In human communication, a message is behavior available in physical forms -- the translation of ideas, purposes, and intentions into a code, a systematic set of symbols."[10]

Persuasion

Situation

Mr. Clark, an agronomist and county agent in Ohio, could see the need for increased emphasis on fertility as a means of increasing income. Very little had been done before Clark came to the county. He began an intensive program with a large number of commercial farms, fertilizer dealers, farm suppliers, vocational agricultural teachers, bankers, the Production Credit Association and various committees throughout the county.

The first phase of this program included a drive for soil samples over a two week period. Tools for taking samples, soil sample boxes and information on sampling were made available at key locations in the county. The number of samples received increased from 250 to 1000 in one year.

A similar increase occurred in a Mississippi county where the county agent began the program with a survey of the effects of using soil test recommendations on crop yields. Publicity for a soil testing drive was subsequently based on this survey information and used in news articles, on radio and television, and given to farm supply and fertilizer dealers for use in their publicity programs.

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[10] Berlo, op. cit., p. 30.

Relevance of the Concept

The problem of the extension agent was to show how soil sampling could lead to increased profits. The communication problem was one of persuasion. That is, farmers already knew of the existence of soil testing, however, their indifference to its importance had to be replaced with a desire to meet an existing need.

The program was well planned with persons of authority acting as reinforcing agents. The objective was clear. Several different channels were used to disseminate the information. Increased profit acted as a stimulus to motivate the audience. Information and equipment were readily available.

The long-run effectiveness of a persuasive communication, however, depends on the willingness of the receiver to show the desired response and continue to maintain this new behavior in spite of pressures to pull or push him into making undesirable responses.[11]

In the case of persuasion communication, motivation to accept or reject becomes a major consideration, and may sometimes even influence the degree of attention and comprehension.[12]

Definition of Persuasion

Persuasion is the process of obtaining another's adoption of a course of action, or his assent to a proposition, by an appeal to both feeling and intellect.[13]

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[11] Hovland, Janis, and Kelly, Communication and Persuasion. (New Haven: Yale University Press, 1953), p. 17.

[12] Ibid., p. 290.

[13] English and English, op. cit., p. 385.

Sender

Situation

Radio, television, newspapers, still pictures, movie pictures, demonstrations; all are channels through which communicators send messages to the public. Flashing neon lights to the printed newspaper are all attempting to gain the attention of an audience for widely different purposes. It may be to buy, to inform, or to entertain.

Relevance of the Concept

The sender uses different methods to take the message from the source to its destination. He encodes his thoughts and speaks, visualizes and/or writes.

Whereas producing messages involves writing, speaking (including media) visualizing (including plastic art); consuming messages involves reading, listening and observing.

No matter how important the speaker's message, or how strongly he feels about it, it is the complex beliefs and attitudes of his listener with which he must deal. Communication does not have to be verbal. The invention of the camera represented a great leap forward in the technology of communication because of the illusion of reality which the photograph conveys. Actually the photograph is simply another symbol, as the printed word is a symbol. However, the viewer believes that he is not being told about something as someone else saw it, but is experiencing it himself.

Over ninety percent of the communication we do with words. Our day is filled with chats, discussions, inquiries, replies to inquiries, explanations, telephone calls and interviews.

In speech the symbol that is you -- your appearance, your background, your voice, your personality, -- stands open for fullest scrutiny.[14]

Observation is an alert, continuing and creative kind of perception that comes noticeably to all of us. All men and women observe as all men and women think. Like thinking some men and women observe with greater intensity and better control and develop keen powers of control.[15]

Definition of Sender

All human communication must have some source or sender, some person or group of persons with a purpose, a reason for engaging in communication.[16]

Encoding is important and can be thought of as the process of translating everything that lies behind a particular communication effort into written, spoken and/or a visual code in such a way that the audience can understand.[17]

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[14] Brennan, op. cit., p. 428.

[15] Ibid, p. 79.

[16] Berlo, op. cit., p. 30.

[17] Edward J. Robinson, Communication and Public Relations. (Columbus: Charles E. Merrill Books, Inc., 1966), p. 69.

Receiver

Situation

John Riddle, a very large and competent beef producer in a mid-western state desired to increase feed efficiency in his steer enterprise. He was already doing an excellent job of feeding and because of his specialized education (B.Sc. in Animal Science) and managerial ability, the county agent and vocational agricultural teacher could not offer much constructive help except to provide him with the latest bulletins and references in the field.

In an enterprise where Mr. Riddle was trying to find out how to save a pound of feed to a hundred pounds gain more specialized sources had to be consulted. This particular farmer spent much of his time searching out information at the State University and consulted specialists in the fields of Nutrition and Animal Science.

Relevance of the Concept

In specific cases of this nature the county agent may not act as the source of information but rather encourage the farmer to study the books the experts are studying and dig out his own information. More authoritative sources are needed. The county agent should act as an intermediary to give direction to more credible and authoritative sources. This farmer, as a receiver of information, was interested in reading the best books, listening to top specialists and observing the top beef feeder operations in the country.

Definition of Receiver

All human communication must have some source, some person or group of persons with a purpose, a reason for engaging in communication. The person or persons at the opposite end of the communication, the target of communication, are the receivers.[18]

Educational Objectives for Training Programs

Three primary sources have been used in reviewing alternatives in selecting the suggested educational objectives: (1) the nature and role of the job, (2) the identification of communication concepts and (3) suggestions from subject-matter specialists.

The objectives included herein are suggested as guidelines in considering general areas of intensive study in communication. Each individual instructor should decide on the most important areas for consideration and formulate the specific teaching objectives and learning experiences for the particular training program in which he may be involved.

1. To understand communication as a dynamic process involving a number of concepts in action.
   a. Be able to construct a meaningful communication model that explains the various concepts of communication; source, message, channel and receiver.
   b. To explain those influences that affect the above mentioned elements within the model.

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[18] Berlo, op. cit., pp. 30-31.

2. To understand the importance of the concepts of communication in introducing educational change in agriculture.
   a. Be able to identify the relevant situational information needed for communication.
   b. Be able to identify educational problems through a situational analysis of the communication process.
   c. To be able to design educational experiences using the concepts of communication.
   d. To increase the ability to evaluate the effectiveness of the communication or the use of communication procedures.
3. To understand the concepts and principles of communication and their relationship to Agricultural Education.
   a. Be able to describe the educational role of Agricultural Education and its contribution to the total field of adult education.
   b. Be able to describe the role of the agricultural education communicator.
4. To understand the importance of the communicator in presenting valid information.
   a. Be able to state the purpose of the intended message.
   b. Be able to identify the needs and desires of the audience.
   c. Be able to identify the needed skills and competencies of the communicator.
   d. Be able to collect, organize and present content that is meaningful and will give lasting satisfaction to the audience.

e. Be able to identify and use the relevant concepts of communication in the development and delivery of a presentation for a specific interest area.

f. Be able to evaluate the results of the communication.

5. To understand the sources of communication difficulties.

a. To be aware of the dangers of misunderstood perceptions, mismatched experience, lack of credibility, misuse of communication channels, too strict control over the communication effort, role conflict, norm conflict, lack of attention to feedback and informal network.

6. To understand the sender-receiver relationship in the communication process.

a. Be able to state a philosophy of involvement of people in communication which is consistent with the principles of adult learning and the objectives of the organization.

b. To become better listeners by hunting for the useful and practical in every situation.

c. To realize the importance of motivation as a factor in attaining interest and meeting needs of the audience.

d. To recognize the importance of perception in communication.

7. To understand qualities desirable for communicators to improve the dissemination of information.

a. To develop ability as a small group discussion leader.

b. To develop ability to instruct and inspire persons on a person-to-person or mass basis.

c. Be able to understand the value system of the group to be influenced by the communication.

d. Be able to analyse the power structure in a group or institution.

Suggested Material for Explaining the Educational Objectives

The material related to the various objectives previously mentioned is not intended to be inclusive. At best, it will suggest some of the major areas to be considered under each of the general objectives.

Objective I. To understand communication as a dynamic process involving a number of concepts in action.

The definitions and models shown below are only a sampling of the many that are available. However, they do serve to illustrate the importance and relationship of many of the concepts discussed in this study.

Communication is defined as the sharing of ideas and feelings in a mood of mutuality. It is a two-way process.[19]

> Communication comes from the Latin communis, common. When we communicate we are trying to share information, an idea, or an attitude --- the essence of communication is getting the receiver and sender "tuned" together for a particular message ---- Communication always requires at least three elements - the source, the message, and the destination. A source may be an individual (speaking, writing, drawing, gesturing) or a communication organization (like a newspaper, publishing house, television station or

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[19] Edgar Dale, "Instructional Resources," Instructional Resources in the Changing American School, Sixty-fifth Year-book of the National Society for the Study of Education, Part II (Chicago: University of Chicago Press, 1967), p. 90.

motion picture studio). The message may be in the form of ink on paper, sound waves in the air, impulses in an electric current, a wave of the hand, a flag in the air, or any other signal capable of being interpreted meaningfully. The destination may be an individual listening, watching, or reading; or a member of a group, such as a discussion group, a lecture audience, a football crowd or a mob; or an individual member of the particular group we call the mass audience, such as the readers of a newspaper or a viewer of television.[20]

--- sharing lies at the heart of the word communication. When people are in communication, they make common or share their ideas and feelings. The process of sharing ideas and feelings implies a number of elements - a communicator and a receiver of that communication; some kind of purpose and expression on the part of the communicator; some kind of perception, interpretation, and response on the part of the receiver, some kind of bond or channel linking the communicator and the receiver of that communication, and some kind of occasion or living situation in which the communication occurs. --- In taking a first sophisticated view of the what, how, why, when, and where of communication, it is important that we see this subject in full process, for only when we see the process of life are we looking at the whole of communication.[21]

Robinson (Fig. 1) suggests that the sender in receiving and collecting information (decoding) is making sense out of this information (assigning meaning) and developing and executing a communications program consistent with this gathered and interpreted information (encoding). This process was described as a circular one, out of which one cannot really separate (except for analysis of purpose) the three functions of decoding, assigning meaning, and encoding.[22]

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[20]Wilbur Schramm, The Process and Effects of Mass Communication. (Urbana: University of Illinois Press, 1955), pp. 3-4.

[21]Brennan, op. cit., pp. 12-14.

[22]Robinson, op. cit., p. 77.

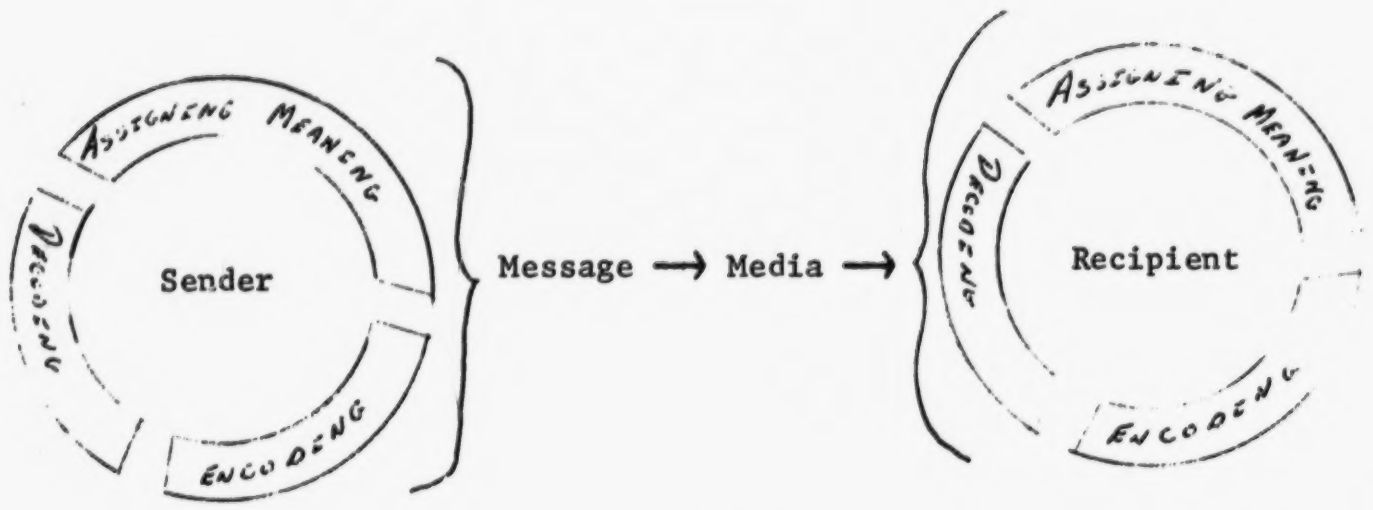

Fig. 1 -- Circular process of the three functions of decoding, assigning meaning and encoding.

Schramm (Fig. 2) indicates that communication is highly dependent on the field of experience of both the source and the receiver. The more the two have in common in the way of experience, the easier and the more effective the communication will be.

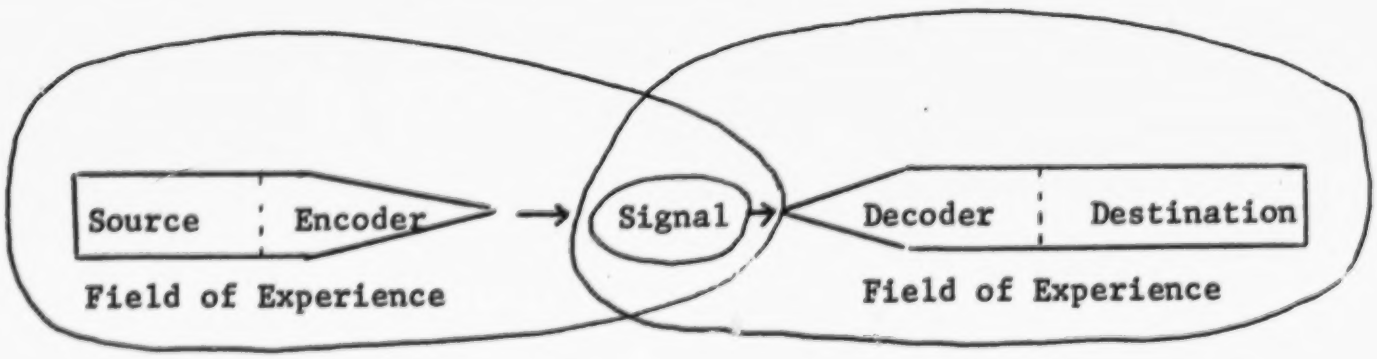

Fig. 2. -- The importance of common experience for effective communication.

The source can encode and the destination can decode, only in terms of the experience that each has had.[23]

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[23] Schramm, op. cit., pp. 6-9.

Yet another way that the process can be diagramed is shown in Fig. 3.

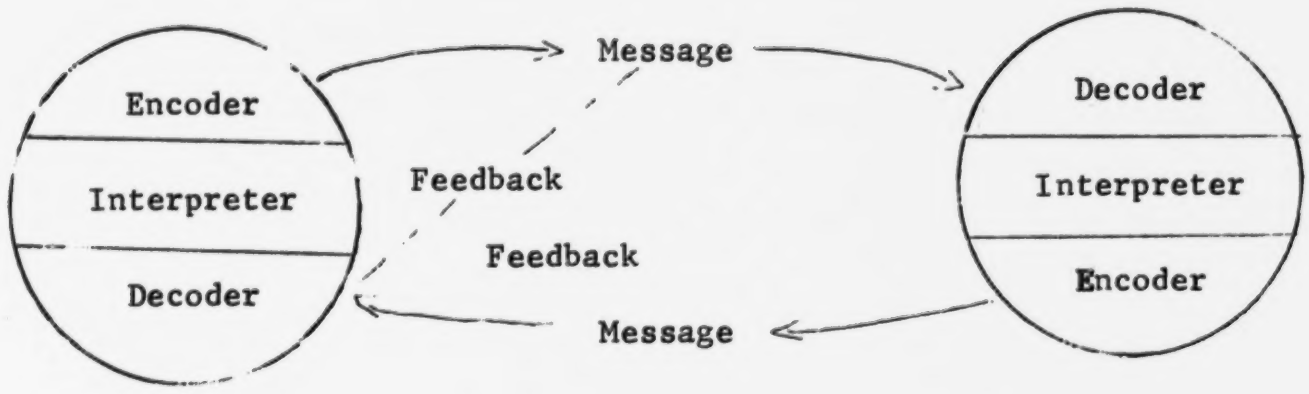

Fig. 3. -- The relationship of feedback to the communicator.

An experienced communicator is attentive to feedback, and constantly modifies his message in light of what he observes in or hears from his audience.[24]

A model prepared by the Federal Extension Service (Fig. 4) includes many of the concepts identified in this study and further clarifies the concepts shown in the previous models.

S _____ M _____ C _____ R

SOURCE sends a MESSAGE through a CHANNEL to a RECEIVER

Source may be	Message may seek	Channel may be	Receiver may be
a person,	to -- report	-- speaking	-- one person
organization,	-- interpret	-- writing	-- small group
government	-- persuade	-- visualizing	-- mass audience
	one or more of these)		

WHO says WHAT through what CHANNEL to WHOM?
FEEDBACK the other half of S-M-C-R
-- for what purpose?
-- with what effect?
-- in what situation?

Fig. 4. -- The Communication Process

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[24] Ibid.

Objective II. To understand the importance of the concepts of communication in introducing educational change in agriculture.

Communication involves planning. Effective communication like effective planning can be accomplished best by keeping in mind the important steps to be considered. Two examples of organizing for communication effectiveness follow:

A. We begin by analyzing the problem, and then follow with gathering facts, organizing the facts, forming an outline, determining what is needed to convey our meaning, throwing it into interesting form, and adding human interest so as to motivate action. Then we may speak or write with assurance.[25]

B. 1. Situation analysis

2. Problem identification

3. Identify worthwhile educational objectives and changes in practice that should be made.

4. Plan for communication:

a. Create a feeling of need in the clientele.

b. State the problem.

c. Identify probable possibilities.

d. List factors to consider.

e. Secure facts.

f. Arrive at a decision to the problem.

5. Decide on the most effective channel or channels for disseminating the information.

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[25]"Communication is Vital," The Royal Bank of Canada Monthly Letter, Vol. XLVIII, No. 10. (Montreal: The Royal Bank of Canada, 1967), p. 2.

6. Collect relevant information to support the facts and the decision arrived at.
7. Communicate the information to the target audience.
8. Follow through with person-to-person consultation and press for some action of an overt behavioral nature.
9. Allow for adequate feedback.
10. Evaluate the communication effort.
11. Make some general conclusion.

Objective III. To understand the concepts and principles of communication and their relationship to Agricultural Education.

Communication is closely associated with teaching and learning. Principles of communication resemble those of teaching and learning.

1. Communication is an essential part of Agricultural Education.
2. Planning is fundamental to communication.
3. Communication skills may be learned and improved upon.
4. The clearer, the more realistic and relevant the message the more effective the learning.
5. We communicate best what we practice.
6. We communicate to report, to interpret and to persuade.
7. There is a motivation factor in all communication.
8. We communicate best what is meaningful to us.
9. Most people never reach their potential in communicative effectiveness.
10. Guidance in how best to communicate is essential.

11. The communicator must have access to adequate, credible sources of material for effective communication to take place.
12. Appropriate standards of performance must be clear to the communicator.
13. Satisfaction must be derived from the act of communication.
14. The message being communicated should be appropriate to the level of education, interests and experience of the learner.
15. The communication method used should be carefully considered from among the possible ways of transmitting the message.
16. Communication effects are a result of a number of forces, of which the communicator can control only one - the message: Others are (1) situation in which the communication is received, (2) the personality state of the receiver, (3) his group relationship and standards.

Objective IV. To understand the importance of the communicator in presenting valid information.

The communicator, source or sender of a message is essential for communication to take place.

Fortunately, there are some things a communicator can do to improve his credibility to an audience. A good communicator is characterized by the following:

1. He knows:

   His objectives - has them specifically defined.

   His audience - needs, interests, abilities, predispositions.

   His message - content, validity, usefulness, importance.

Channels that will reach the audience.

How to organize and treat his message.

His professional abilities and limitations.

2. He is interested in:

His audience and its welfare.

His message and how it can help people.

Results of communication and their evaluation.

Communication process.

Communication channels - their proper use and limitations.

How to improve his communication skill.

3. He prepares:

A plan for communication - teaching plan.

Communication materials and equipment.

A plan for evaluation of results.

4. He has skill in:

Selecting messages.

Treating messages.

Expressing messages - verbal and written.

Selecting and using channels.

Understanding his audience.

Collecting evidence of results.[26]

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[26] J. Paul Leagans, Communication Process in Rural Development. (Ithaca: New York State College of Agriculture, 1963), p. 10.

Objective V. To understand the sources of communication difficulties.

There are three levels of communication problems commonly referred to as technical problems, semantic problems and effectiveness problems.

1. How accurately can the symbols of communication be transmitted? (The technical problem)
2. How precisely do the transmitted symbols convey the desired meaning? (The semantic problem)
3. How effectively does the received meaning affect conduct in the desired way? (The effectiveness problem.)[27]

Since most of the communication problems involve the channel, an understanding of the obstructions that can enter into the process at this point should be considered.

1. Failure of a channel to reach the intended audience.
2. Failure of a communicator to handle channels skillfully.
3. Failure to select channels appropriate to the objective.
4. Failure to use channels in accordance with the abilities of the audience.
5. Failure to avoid physical distraction.
6. Failure to use a combination of channels.
7. Failure to use a series of channels.

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[27]Claude E. Shannon and Warren Weaver, The Mathematical Theory of Communication. (Urbana: University of Illinois Press, 1949), pp. 95-96.

[28]Leagans, op. cit., pp. 14-15.

Objective VI. To understand the sender-receiver relationship in the communication process.

As in the case of the communicator, no communication can take place without a receiver. Good listening habits can be a great aid to learning. Good observing and reading habits are also essential to the receiver.

1. Good listening habits build the shortest line possible between you and what is new in the world.
2. Good listening habits provide us with the most comprehensive grasp possible of the information-charged world around us.
3. Good listening habits provide us with a means of supplementing and revising quickly, constantly and efficiently our working fund of information and skill.
4. Good listening habits integrate our various traits and skills as we apply our talents to the problem of living.
5. Good listening habits provide us with natural and valuable depth to what we see.[29]

Perception is important both to the communicator and the receiver. The following principles help to explain the role of perception in communication.

1. We perceive best what we are prepared to perceive.
2. We can improve our efficiency as perceivers by giving attention to conditions which surround the act of perception and by acquiring good habits of perception.

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[29]Brennan, op. cit., pp. 87-88.

3. The more we involve our sensory equipment in the act of perceiving, the deeper will be the impression we gain through perception.
4. All perceiving requires structuring by the mind to make that perception meaningful; hence, the more assistance you can give your mind to this task of structuring the more efficiently your mind can perceive.
5. Our senses sometimes mislead us; hence, we must guard ourselves constantly against sensory distortion.[30]

Objective VII. To understand qualities desirable for communicators to improve the dissemination of information.

The communicator is generally in control of the situation. He can be most effective by being attentive to the whole process.

1. The sender must have clear information.
2. The message must be encoded fully, accurately, effectively and in a transmittable sign.
3. The message must be transmitted rapidly enough and accurately enough to prevent other competitive factors from interfering.
4. The message must be decoded in a pattern corresponding to the encoding.
5. The receiver must be able to handle the decoded message.[31]

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[30] Ibid., pp. 77-79.

[31] Shannon and Weaver, op. cit., pp. 124-126.

The communicator must have something to say. The principles related to the message should be helpful in preparing and presenting a message.

1. The message must be so designed and delivered as to gain the attention of the receiver.
2. The message must employ signs which refer to experience common to both sender and receiver, so as to "get the meaning across."
3. The message must arouse personality needs in the receiver and suggest some ways to meet those needs.
4. The message must suggest a way to meet those needs which is appropriate to the group situation in which the receiver finds himself at the time when he is moved to make the desired response.[32]
5. A message is much more likely to succeed if it fits the patterns of understandings, attitudes, values, and goals that a receiver has; or at least, if it starts with this pattern and tries to reshape it slightly.

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[32]Wilbur Schramm, "Procedures and Effects of Mass Communication," Mass Media and Education, The Fifty-third Yearbook of the National Society for the Study of Education, Part II. (Chicago: University of Chicago Press, 1954), p. 121.

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